

FIG. 3

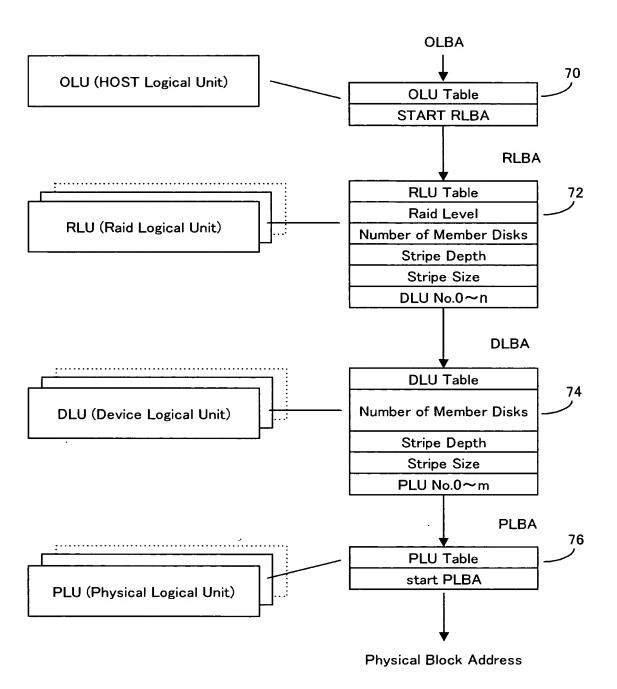
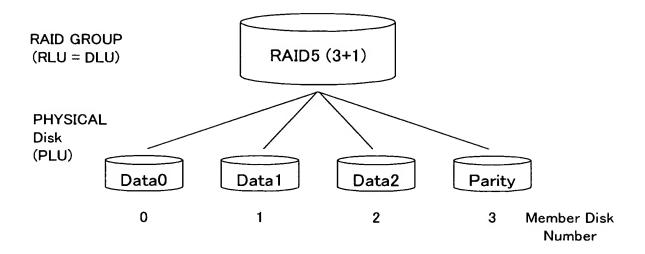


FIG. 4



Member Disk Number

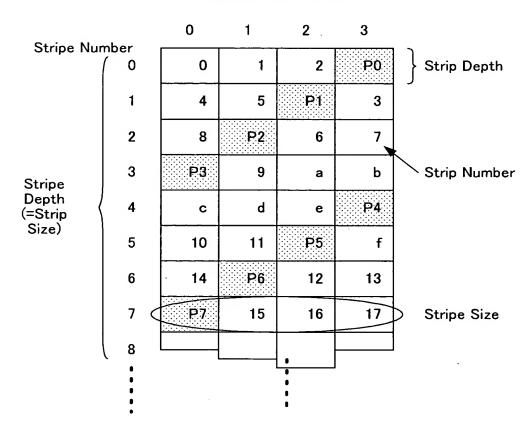


FIG. 5

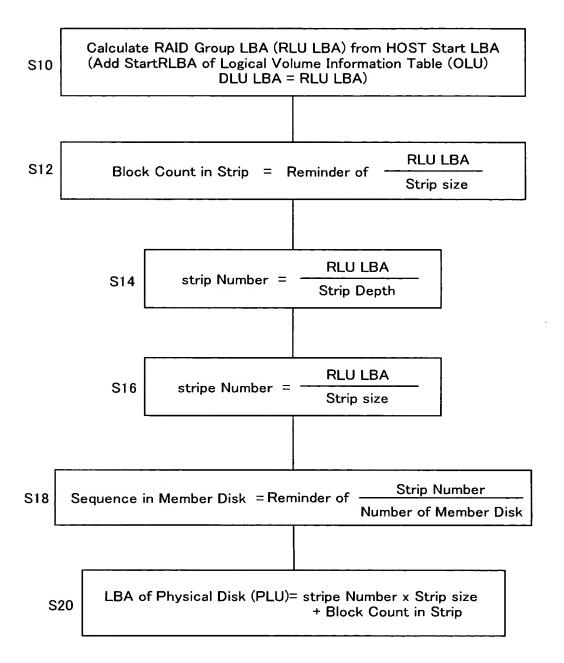
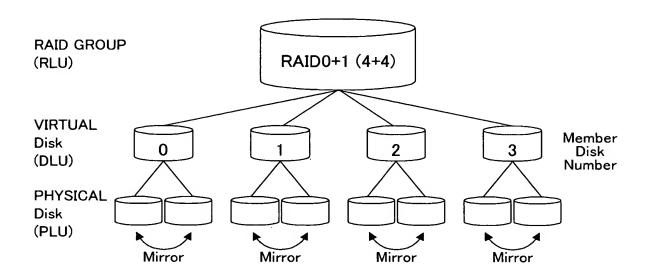


FIG. 6



Member Disk Number

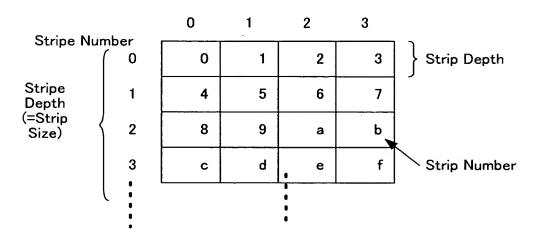
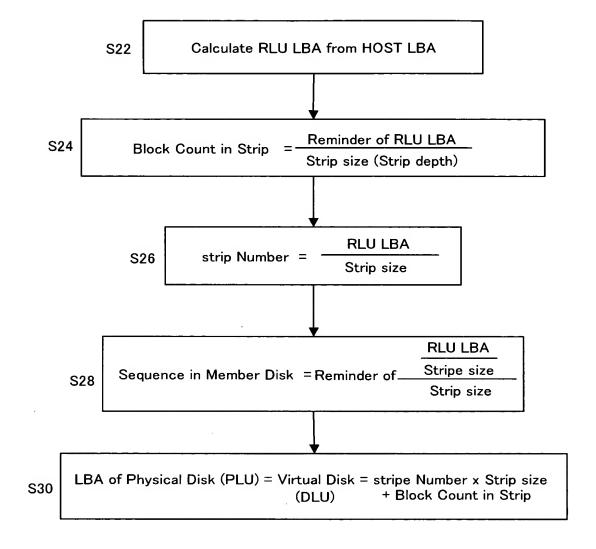
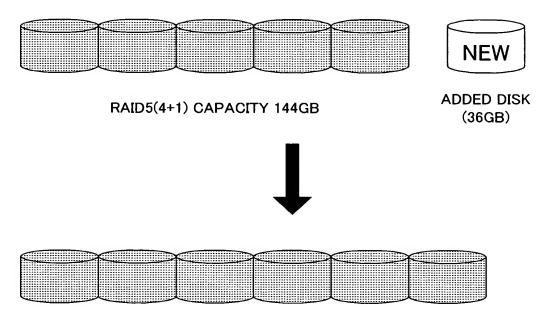


FIG. 7



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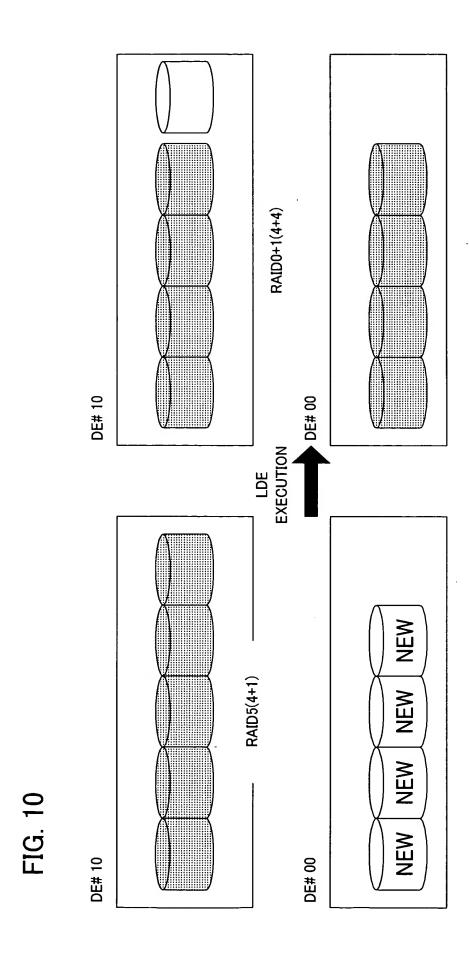
FIG. 8



RAID5(5+1) CAPACITY 180GB

UNUSED DISKS (OLD DISKS CONSTITUTED RAID 5) RAID5(4+1) CAPACITY 144GB **EXECUTION** LDE NEW NEW RAID5(4+1) CAPACITY 72GB NEW DISKS (36GB) NEW NEW NEW

FIG. 9



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FIG. 11

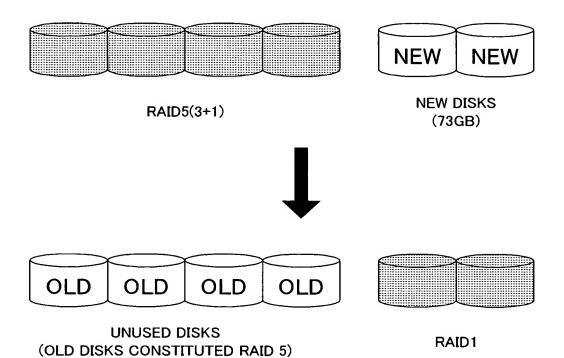
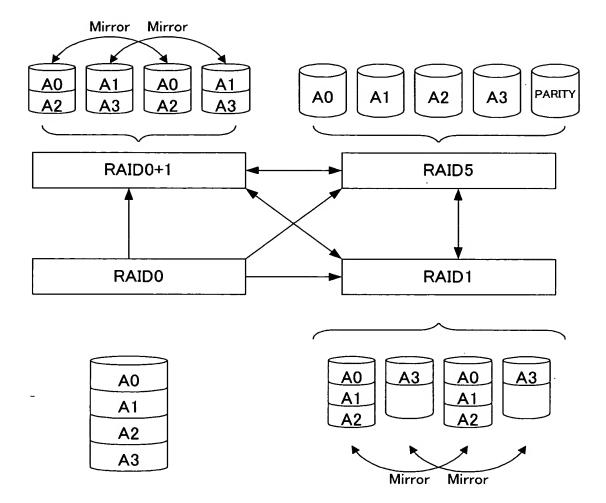
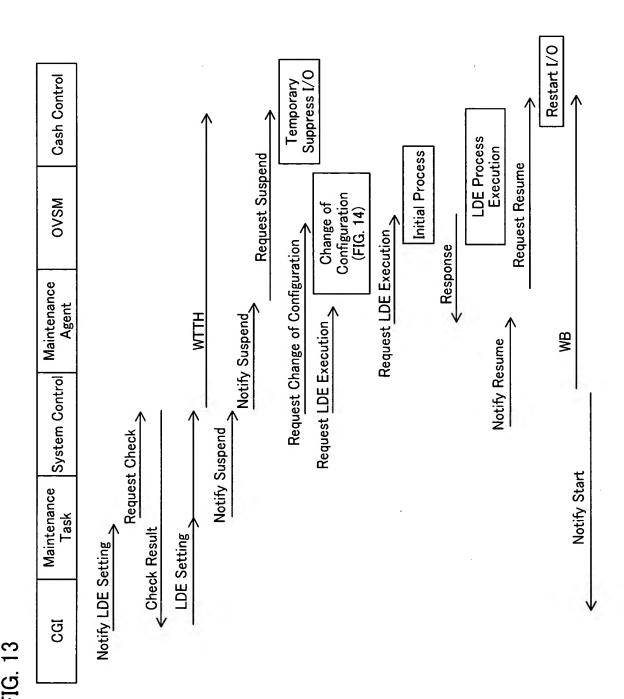


FIG. 12



2,

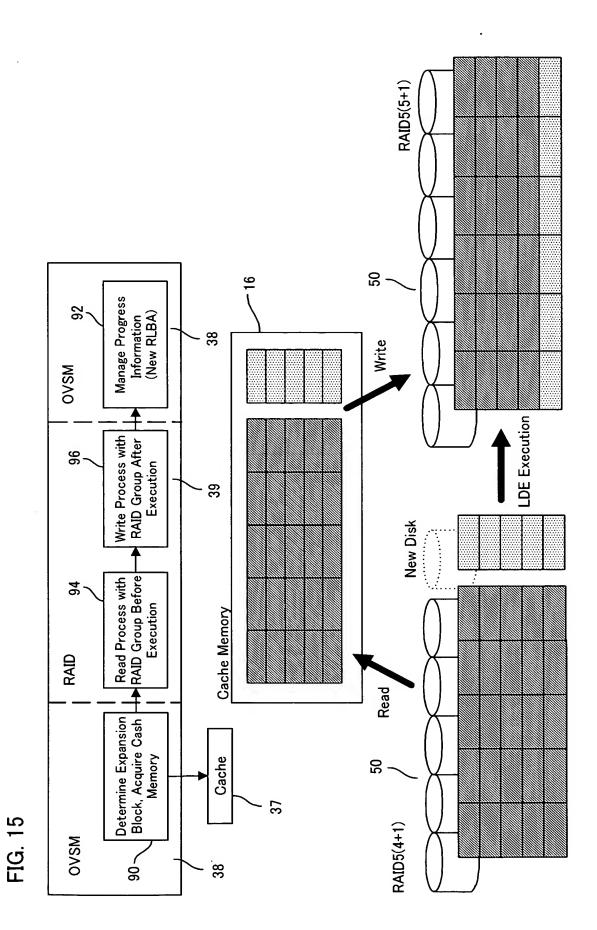


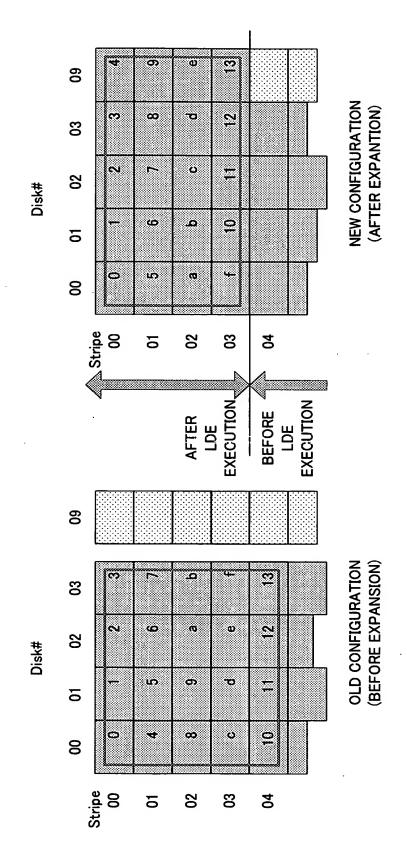
7	4
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RAID Definition (New Configuratin) Temporary RAID Definition (Old Configuration)			Configura	Configuration Definition Information		LDE Progress	
RAID			LUN	ITEM	Before Execution		End
Rul						1	1
RAID				Level	RAID5	↓	1
RALD				MemberDisks	5	9	1
RAID	32		=	PLUNs	10–14	10–15	1
RIockCount 400 500 CheckCode id#0 ← CVM mode 0 LDE Flag DLU 0 ← PLU CVM mode − FAID5 MemberDisks − 5 F PLUNs − 0 F BlockCount − 400 F CheckCode − 400 F CheckCode − T Flag F DLU DLUN − T Flag DLU − − T Flag DLU − − −	5	RAID	בר	StartLBA	0	1	1
Temporary RAID Definition (Old Configuration) PLU) CheckCode id#0 id#0 — CVM mode —		New Configuratin)		BlockCount	400	200	1
DLU DLUN				CheckCode	0#P!	↓	Ţ
DLU DLUN				CVM mode	0	LDE Flag	0
PLU			DLU	DLUN	0	1	1
Temporary RLU			PLU				
Temporary RLU StartLBA							1
Temporary RAID Definition RLU StartLBA Definition CheckCount DLUN - 10-14 - Oold Configuration) CheckCode - 400 - 400 -				Level	ł	RAID5	1
Temporary RAID Definition (Old Configuration) RAID Definition (Old Configuration) StartLBA				MemberDisks	1	5	ı
RAID			= ō	PLUNs	1	10–14	ı
BlockCount - 400 CheckCode - id#0 DLU - T Flag PLU - 255 PLU - -) ۾ ۾	RAID		StartLBA	ı	0	1
CheckCode - id#0 CVM mode - T Flag DLU - 255 PLU - -)	Definition		BlockCount	1	400	l
CVM mode – T Flag DLUN – 255		(Old Comiguration)		CheckCode	i	0#pi	ı
DLUN - 255				CVM mode	1	T Flag	1
1			סרח	DLUN	. 1	255	ŧ
			PLU	ı	ı	ı	ı

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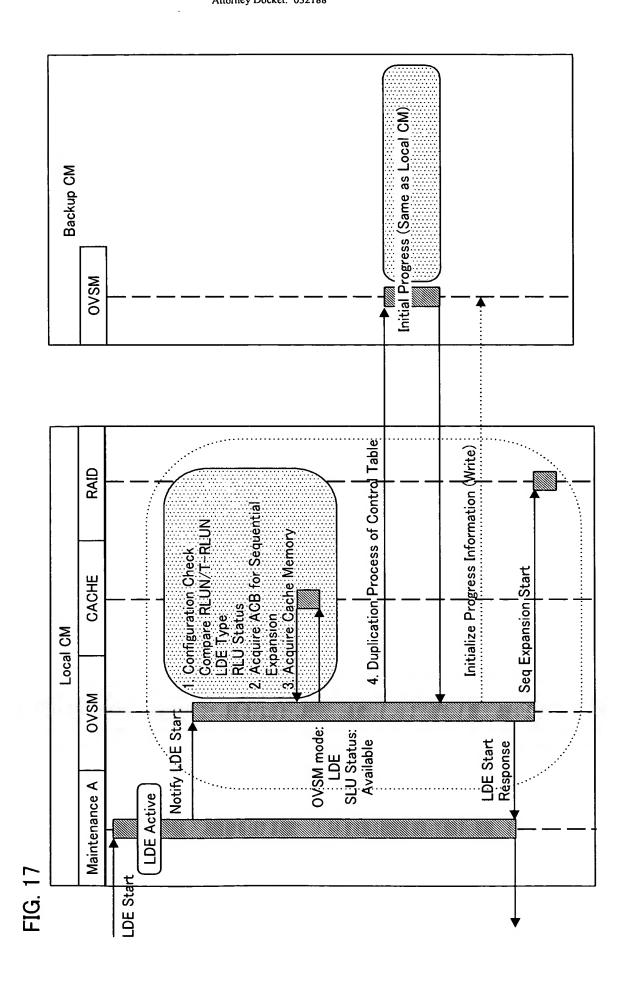
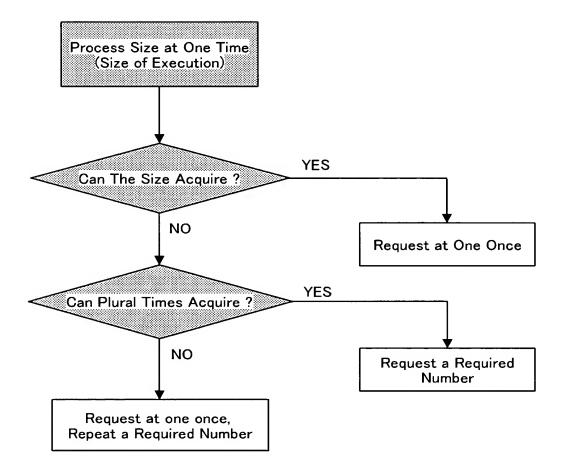
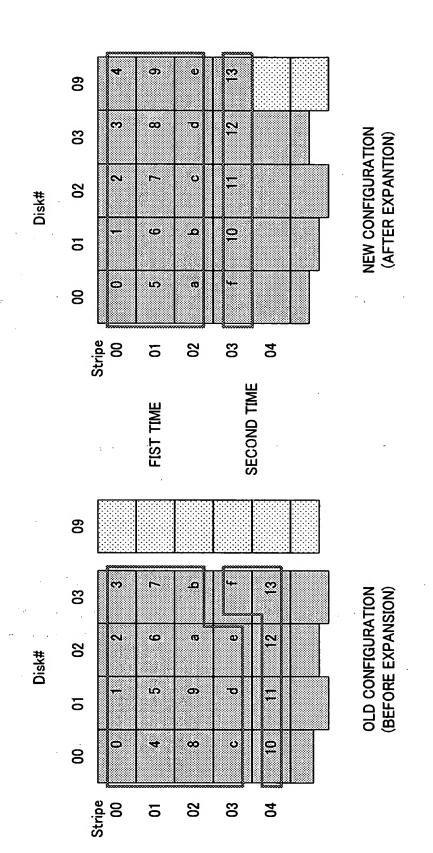


FIG. 18





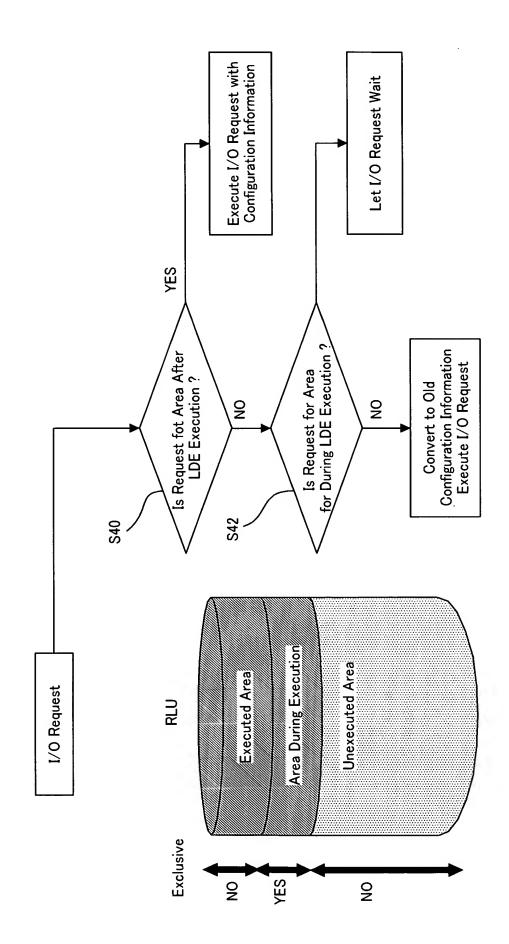


FIG. 21

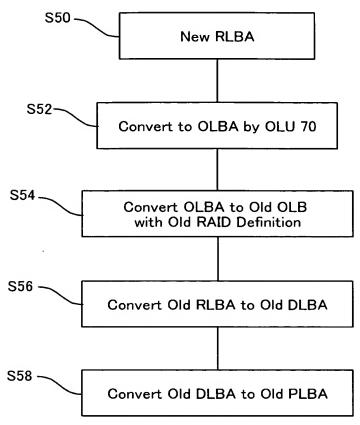


FIG. 22

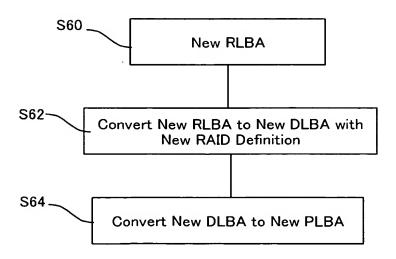
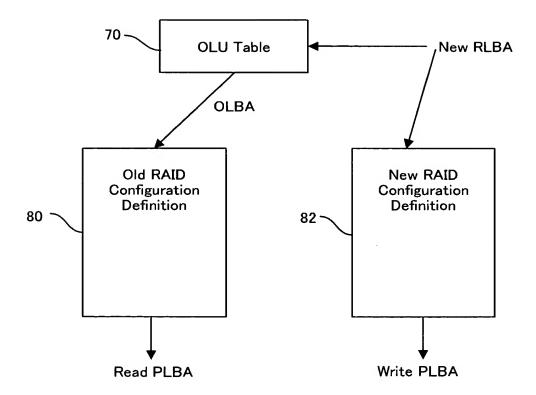
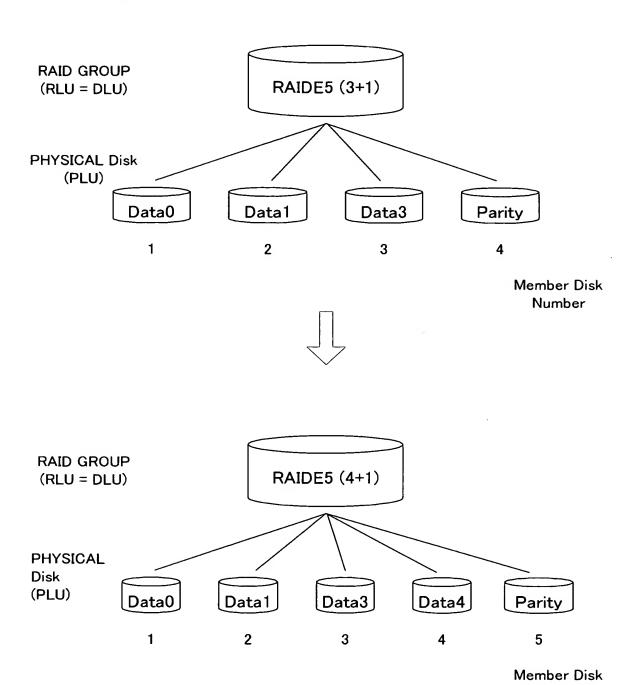


FIG. 23



L		Configurat	Configuration Definition Information		LDE Progress	
		LUN	ITEM	Before Execution	Before Execution During Execution	End
L			RLUN	0	1	1
			Level	RAID5	↓	↓
			MemberDisks	4	9	→
			PLUNs	10–13	10–14	→
~~~~ <u>~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~</u>		RLU	StartLBA	0	<b>→</b>	<b>→</b>
	RAID Definition		BlockCount	400	009	1
			CheckCode	0#P!	1	1
			Status	C	i.	ļ
			(NM mode)	<b>&gt;</b>	LUE Flag	0
		DLU	DLUN	0	<b>→</b>	1
		PLU				
			RLUN	-	255	1
	·		Level	1	RAID5	1
			MemberDisks	ı	4	ı
			PLUNs	ı	10–13	1
 80	Temporary	RLU	StartLBA	i	0	1
3	Definition		BlockCount	1	400	-
			CheckCode	1	0#P!	1
			Status (VM mode)	ţ	T Flag	ı
		DLU	DLUN	ı	255	ı

FIG. 25

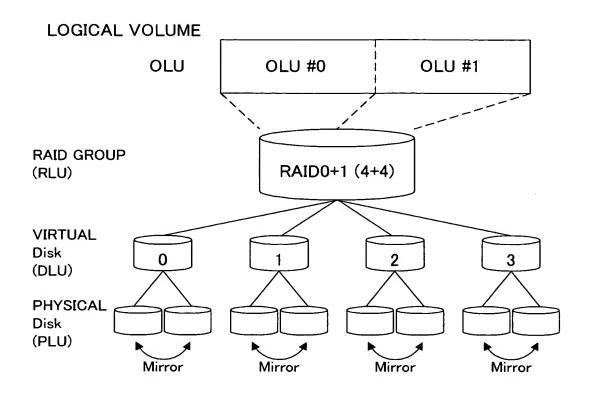


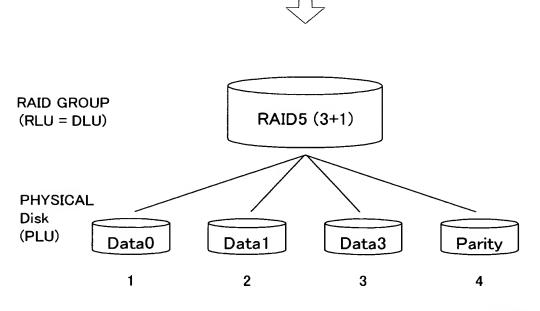
Number

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		Configurat	Configuration Definition Information		LDE Progress	
		LUN	ITEM	Before Execution	Before Execution During Execution	End
			RLUN	0	1	1
			Level	RAID0+1	RAID5	1
			MemberDisks		7	1
		= C	PLUNs		€~0	1
82	RAID	ארט	StartLBA	0	<b>→</b>	1
	Definition		BlockCount	400		1
			CheckCode	0#P!	Ţ	↓
			CVM mode	0	LDE Flag	0
		סרח	DLUN	0	<b>→</b>	1
		PLU				
			RLUN	1	255	1
			Level	-	RAID0+1	ı
			MemberDisks	-	7	ŀ
		:	PLUNs	-	€~0	1
80 Te	Temporary	ארט	StartLBA	1	0	1
$\overline{}$	Definition		BlockCount		400	1
			CheckCode	ı	0#P!	ı
			CVM mode	1	T Flag	1
		DLU	DLUN	ı	255	ı
		DLU	1	ı		ı

FIG. 27





Member Disk Number WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP Title: Raid Apparatus and Logical Device Expansion... Inventor: Mikio ITO et al. Attorney Docket: 032188

## FIG. 28

RLU		DLU 1	
RAID Level	0+1	Stripe Depth	128
Stripe Depth	128	Stripe Size	128
Stripe Size	128×4	Member Disk Count	2
Member Disk Count	4	DLU 2	
		DLU 3	
		DLU 4	



RLU		DLU	·
RAID Level	5	Stripe Depth	128
Stripe Depth	128x3	Stripe Size	128x3
Stripe Size	128x3	Member Disk Count	4
Member Disk Count	1		

FIG. 29

